



US006307847B1

(12) **United States Patent**
Wood, Jr.

(10) Patent No.: **US 6,307,847 B1**

(45) Date of Patent: ***Oct. 23, 2001**

EV 318284646

(54) **METHOD OF ADDRESSING MESSAGES AND COMMUNICATIONS SYSTEMS**

(75) Inventor: **Clifton W. Wood, Jr., Boise, ID (US)**

(73) Assignee: **Micron Technology, Inc., Boise, ID (US)**

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

This patent is subject to a terminal disclaimer.

(21) Appl. No.: **09/617,390**

(22) Filed: **Jul. 17, 2000**

Related U.S. Application Data

(63) Continuation of application No. 09/026,043, filed on Feb. 19, 1998, now Pat. No. 6,118,789.

(51) Int. Cl.⁷ **H04Q 7/00**

(52) U.S. Cl. **370/329; 370/346; 370/347**

(58) Field of Search **370/462, 408, 370/230, 437, 441, 442, 449, 458, 463, 342, 345-6, 347-8, 475, 329**

(56) References Cited

U.S. PATENT DOCUMENTS

4,075,632	2/1978	Baldwin et al. .	
4,862,453	8/1989	West et al. .	
4,926,182	5/1990	Ohta et al. .	
5,142,694	8/1992	Jackson et al. .	
5,365,551	11/1994	Snodgrass et al. .	
5,479,416	12/1995	Snodgrass et al. .	
5,500,650	3/1996	Snodgrass et al. .	
5,583,850 *	12/1996	Snodgrass et al. .	370/342
5,608,739	3/1997	Snodgrass et al. .	
5,621,412	4/1997	Sharpe et al. .	
5,625,628	4/1997	Heath .	
5,627,544	5/1997	Snodgrass et al. .	
5,649,296	7/1997	MacLellan et al. .	

5,805,586	9/1998	Perreault et al. .	
5,841,770	11/1998	Snodgrass et al. .	
6,061,344 *	5/2000	Wood, Jr.	370/346
6,072,801	6/2000	Wood, Jr. et al.	370/437
6,104,333 *	8/2000	Wood, Jr.	341/173
6,118,789 *	9/2000	Wood, Jr.	370/462

FOREIGN PATENT DOCUMENTS

WO 97/48216 12/1997 (WO).

* cited by examiner

Primary Examiner—David R. Vincent

(74) Attorney, Agent, or Firm—Wells, St. John, Roberts, Gregory & Matkin, P.S.

(57) ABSTRACT

A method of establishing wireless communications between an interrogator and individual ones of multiple wireless identification devices, the method comprising utilizing a tree search method to establish communications without collision between the interrogator and individual ones of the multiple wireless identification devices, a search tree being defined for the tree search method, the tree having multiple levels respectively representing subgroups of the multiple wireless identification devices, the method further comprising starting the tree search at a selectable level of the search tree. A communications system comprising an interrogator, and a plurality of wireless identification devices configured to communicate with the interrogator in a wireless fashion, the respective wireless identification devices having a unique identification number, the interrogator being configured to employ a tree search technique to determine the unique identification numbers of the different wireless identification devices so as to be able to establish communications between the interrogator and individual ones of the multiple wireless identification devices without collision by multiple wireless identification devices attempting to respond to the interrogator at the same time, wherein the interrogator is configured to start the tree search at a selectable level of the search tree.

37 Claims, 3 Drawing Sheets

